

1.0 EXECUTIVE SUMMARY

During 2003, a total of 2,692 reported vehicular collisions occurred within unincorporated King County. These included 14 fatalities and 971 injury accidents, and represent an estimated societal cost of \$87 million¹.

This report reviews collision trends within unincorporated King County and the safety related programs utilized by the King County Department of Transportation (KCDOT) in the ongoing effort to reduce the number and severity of these collisions. It is intended to provide critical information that can be used to better allocate limited safety funds, increase driver awareness of safety concerns, and improve the safety of the traveling public.

This report is prepared by the Road Services Division's Traffic Engineering Section, and is an integral part of KCDOT's Safety Management System.

1.1. Ten-Year Trends

Annexations and incorporations have significantly reduced the size of unincorporated King County over the past ten years. As a result, the population, maintained road miles, and annual miles driven on county roadways have decreased.

It is necessary to account for these external factors when comparing 2003 collisions with data from previous years. To allow direct comparison, the data is "normalized" using the estimated accident rate for vehicular collisions, and using collisions per 10,000 population for pedestrian and bicycle collisions. The estimated accident rate (accidents per million vehicle miles) has fluctuated, varying between 1.10 and 1.54, with little evident trend. Pedestrian and bicycle collision rates (collisions per 10,000 population) have decreased by 17% and 51%, respectively.

Further information on trends is provided in Sections 3 and 4 of this report.

1.2. 2003 Collisions

Approximately two-thirds of the accidents in 2003 fell into one of three categories: run-off-road, rear end, or right angle collisions. Pedestrian and bicycle collisions comprised 1.4% and 1.0% of the accidents, respectively.

Run-off-road collisions were the most frequent accident type, accounting for approximately one-fourth of all collisions and seven of the fourteen fatal accidents. A total of 629 run-off-road collisions occurred during 2003, with an estimated cost of \$22.1

¹ The following estimated costs per accident are used in this calculation: Property Damage Only-\$6,000, Injury-\$65,000, Fatality-\$1,000,000

million. Two-thirds of the run-off-road collisions involved an isolated fixed object, and utility poles were the most frequently struck isolated object.

Approximately 90% of all pedestrian, bicycle, and motorcycle collisions resulted in an injury or fatality. In addition, one-half of all pedestrian collisions involved a pedestrian under age 20, and two-thirds of all bicycle collisions involved a cyclist under age 20.

Review of 2003 collision data indicates the following:

- Two-thirds of all collisions occurred during dry pavement conditions.
- 44% of collisions occurred at intersections. Rear-end, right angle, run-off-road, and left turn collisions comprise 80% of all intersection accidents.
- Nearly one-third of the non-intersection collisions were run-off-road accidents.
- Nearly one-half of the collisions occurred on roadways with steep grades, horizontal curves, or combinations of these alignments. Since these alignments are thought to comprise a much smaller percentage of King County's road system, it is likely that the accident rate at these locations may be significantly higher than at level tangent sections.
- Over 1/3 of the drivers involved in collisions were between 16 and 24 years old.
- Alcohol was involved in approximately 11% of all collisions.
- Defective equipment was discovered in vehicles in 123 collisions.

Additional 2003 collision information is contained in Sections 5 and 6 of this report.

1.3. Safety Related Projects and Programs

Safety is an integral component of all Road Services Division projects. Several projects and programs that focus on safety are discussed below:

- The Countywide Guardrail Program addresses roadside safety by focusing on locations with a high risk of run-off road collisions. The goal of this program is to reduce the frequency and severity of run-off-road collisions by improving the roadside environment. In 2003, 12,450 linear feet of guardrail was installed on eight roadway corridors. Fixed objects and other roadside hazards on these corridors were also eliminated.
- The HAL/HARS Program identifies, prioritizes, and implements safety improvements for King County's High Accident Locations (HALs) and High Accident Road Segments (HARSs). The primary goal of the program is to address safety in the most cost-efficient manner by directing limited resources at the most effective improvements. Accomplishments during 2003 include:
 - A new HAL/HARS priority list was produced based on 1998 through 2000 collision data. The list contains 48 HALs and 51 HARSs.
 - Work continued on projects on the 1996 list. This list contains 100 HALs and 50 HARSs. As of December 2003, the majority of the projects have

- been completed. Twenty-three projects were in the planning, design or construction phase, one was on hold, and four were unfunded.
- Before/After Studies were completed to assess the impact of 35 completed HAL/HARS projects. A reduction in collisions occurred at the majority of the locations. The projects eliminated 129 collisions each year, and the estimated annual cost savings associated with the reduction in accidents is approximately \$1,400,000.
- When properly designed and operated, traffic signals are valuable devices for the control of vehicular and pedestrian traffic. King County currently owns and operates 133 traffic signals. In 2003, six new traffic signals were added and four locations were modified to improved safety, efficiency, and capacity.
 - Many of the Road Services Division's Capital Improvement Program (CIP) projects are directly related to safety, and most of the remaining CIP projects have a safety component. Thirty-seven CIP projects were constructed in 2003, while design continued on forty-eight additional projects.
 - Properly designed and maintained signs are critical to roadway safety. KCDOT owns and maintains approximately 46,000 signs. During 2003, 800 sign-related work orders were issued.
 - Reported pedestrian collisions are infrequent, but receive special attention due to their severity. The Pedestrian Pathway Prioritization (3P) Program, also referred to as the Pedestrian Safety and Mobility Program, designs and constructs improvements for pedestrians and other non-motorized users. This program is managed by the Traffic Engineering Section, and funded through the CIP.
 - The School Pathway Program is a collaborative effort between King County and the county's 16 public school districts and dozens of accredited private schools. Each district submits a list of potential pathway projects based on their prioritized needs. Projects are selected based on the priority rating given by the school district, cost, location, size and feasibility.
 - Traffic safety investigations include speed limit studies, requests for parking prohibition, sight distance concerns, requests for illumination, intersection operational improvements, installation of signing, traffic control and flasher installation. During 2003, the Traffic Engineering Section completed approximately 640 traffic safety investigations.
 - Targeted enforcement can dramatically improve safety in problem areas by reducing speeding and other illegal driving behavior, and by educating motorists on safe driving practices. The Selective Traffic Enforcement Plan (STEP) is a collaborative program bringing together the resources of two King County Departments: the Sheriff's Office and the Department of Transportation. During

2003, STEP officers issued over 2,600 warnings and 6,900 citations with a total of nearly \$900,000 in fines.

- The Neighborhood Traffic Safety Program (NTSP) offers a wide range of services to address the traffic safety concerns within neighborhoods. These services include:
 - The availability of two traffic enforcement officers for speed enforcement within the residential areas.
 - Holding neighborhood meetings to discuss the causes of speeding and to provide educational messages.
 - Placement of signs emphasizing safe driving practices.
 - Use of speed trailers and radar/readerboard cars.

Section 7 contains additional information on safety-related projects and programs.

1.4. Recommendations

One of the primary goals of this Annual Safety Report is to evaluate safety efforts and make recommendations to improve these efforts. The following recommendations are made based on the information developed in this report. Further details on these recommendations are provided in Section 8 of this report.

- Given the number of utility pole collisions, adding a relocation requirement for the poles closest to the edge of the roadway should be seriously considered. King County is currently working with utility companies to revise the Utility Franchise Agreement, and discussion of such a requirement is recommended.
- The ability to review collision data in a Geographical Information System (GIS) database would provide significant benefits with respect to safety management. A review of the cost and staffing requirements to accomplish this within a one-year time frame is recommended. The information obtained in this review could then be used to determine the feasibility of a GIS conversion.
- Further efforts to reduce the severity of motorcycle collisions appear to be warranted. Such efforts could include public service announcements, additional enforcement, and discussion with State officials regarding licensing requirements and driver education.
- Education and outreach for younger drivers may be an appropriate area for additional focus. The State of Washington recently initiated graduated licensing requirements for younger drivers. Additional efforts could include public service announcements, visits to local high schools, and discussion with State officials regarding licensing requirements and driver education.

- Safety improvement projects were identified for four of the “top ten” arterials (those with the highest accident rates). Review of the remaining six arterials for possible safety improvement projects is recommended. A review of the top ten arterials on an annual basis is also recommended.